Program Activity Report (PAR)

Retrospective Serological Survey of PRRSV

Porcine reproductive and respiratory syndrome virus (PRRSV) was discovered in U.S. domestic swine populations in the mid 1980's. This virus may cause late term reproductive failure in pregnant sows or pneumonia in neonatal, nursery and even grow/finish stage pigs. The virus is widespread in the domestic swine industry worldwide and causes an estimated $560 million in annual losses in the U.S. alone. A 2006 study investigating PRRS in 17 swine producing states found an average of 50% of grow-finish pigs to be positive within the 71% of swine production sites where the disease was found. Transmission occurs mainly by direct contact with infected individuals (or infected semen in breeding facilities) however, indirect and aerosol transmission have been shown to move the PRRS virus between production facilities.

PRRSV infection in domestic swine showing characteristic "blue ears"

Now that endemic diseases such as pseudorabies (PRV) and swine brucellosis (SB) have been eliminated from the domestic swine industry, the focus of producers has shifted to the control and eventual elimination of PRRSV in the United States. A potential threat to the success of this eradication effort would be a reservoir of PRRSV circulating independently in feral swine populations.

Limited geographic sampling of feral swine in the U.S. has shown that PRRSV exposure in feral swine tends to be minimal and antibodies were found in fewer than 5% of individuals tested. These findings are in line with what has been documented in feral swine populations in other parts of the world. It has been suggested that feral swine may not be able to maintain PRRSV in their populations in the absence of disease spillover from domestic swine in the vicinity. PRRSV eradication efforts in the domestic industry may be compromised if the maintenance and potential reintroduction of PRRSV by feral swine is discounted.

More than 2,400 samples from the National Wildlife Disease Program's feral swine serum archive were tested to look for presence of antibodies to PRRSV. This retrospective survey covered feral swine populations from 72 counties in 18 states. Feral populations were chosen from counties representing a range of domestic swine production levels to help determine the relationship between domestic swine and the levels of PRRSV exposure seen in feral populations. The geographic distribution and apparent prevalence of PRRSV exposure in feral swine are currently being determined. For more information on this survey when it becomes available, please contact Brandon Schmit, Brandon.S.Schmit@aphis.usda.gov

The original artwork on this page was created by the National Wildlife Disease Program's Erika Kampe and Sarah Goff